CLAIMS

1.   An apparatus comprising:

a memory; and

a first circuit configured to (i) search for a first motion vector for a first current block among a plurality of first reference samples, (ii) copy a plurality of second reference samples from said memory and (iii) search for a second motion vector for a second current block among said second reference samples copied from said memory and at least a portion of said first reference samples.

2.   The apparatus according to claim 1, wherein said first circuit comprises a search memory having a read port and a write port for storing said first reference samples and said second reference samples copied from said memory.

3.   The apparatus according to claim 2, wherein said search memory is configured to store at least a 96 by 48 array of samples from said first reference samples and said second reference samples.

4.   The apparatus according to claim 2, wherein said first circuit further comprises a read control circuit configured to generate a read address to read from said memory.

5.   The apparatus according to claim 4, wherein said first circuit further comprises a write control circuit configured to generate a write address to write to said search memory.

6.   The apparatus according to claim 5, wherein said first circuit further comprises an internal read control circuit configured to generate a read address to read from said search memory.

7.   The apparatus according to claim 1, wherein said first circuit is further configured to copy said second reference samples from said memory as a column of reference blocks.

8.   The apparatus according to claim 7, wherein said column comprise a 1 by 3 array of said reference blocks.

9. The apparatus according to claim 7, wherein said column is spatially adjoining said first reference samples.

10. The apparatus according to claim 1, further comprising:

a second circuit configured to (i) copy a plurality of third reference samples from said memory in an area different than said first reference samples and (ii) search for a third motion vector for said first current block among said third reference samples copied from said memory; and

a memory sub-system configured to control communication between (i) said memory and said first circuit and (ii) said memory and said second circuit.

11. A method for motion estimation, comprising the steps of:

(A) searching for a first motion vector for a first current block among a plurality of first reference samples;

(B) copying a plurality of second reference samples from a memory; and

(C)   searching for a second motion vector for a second current block among said second reference samples copied from said memory and at least a portion of said first reference samples.

12.   The method according to claim 11, further comprising the step of:

copying said first reference samples from said memory prior to searching for said first motion vector.

13.   The method according to claim 11, wherein said second current block adjoins said first current block in a current frame.

14.   The method according to claim 13, wherein said second references samples adjoin said first reference samples in a reference frame.

15.   The method according to claim 11, wherein the steps of (A) searching for said first motion vector and (B) copying said second reference samples are performed substantially simultaneously.

16.   The method according to claim 11, further comprising the step of:

overwriting a portion of said first reference samples with a plurality of third reference samples.

17.   The method according to claim 11, wherein said first reference samples are copied from a first window displaced from said first current block by a first offset.

18.   The method according to claim 17, further comprising the step of:

copying a plurality of third reference samples from a second window displaced from said first current block by a second offset different than said first offset.

19.   The method according to claim 18, further comprising the step of:

searching for a third motion vector for said first current block among said third reference samples.

20. An apparatus comprising:

means for searching for a first motion vector for a first current block among a plurality of first reference samples;

means for copying a plurality of second reference samples from a memory; and

means for searching for a second motion vector for a second current block among said second reference samples copied from said memory and at least a portion of said first reference samples.